



# TRILEPIDEA

NEWSLETTER OF THE NEW ZEALAND PLANT CONSERVATION NETWORK

Please send news items or events to [events@nzpcn.org.nz](mailto:events@nzpcn.org.nz)

Postal address: P.O. Box 16-102, Wellington, New Zealand

E-NEWSLETTER: NO 101. APRIL 2012

Deadline for next issue: Monday 14 May 2012

## Council member guest editorial – It is all about the plants

As the summer draws to a close, it is a good time to reflect on recent field expeditions and to plan future botanical exploration. Over the last of the summer months, I have been lucky to be able to explore many and varied habitats, from one coast of the central North Island to the other. At Aotea Heads, on the western side, this included the impressive expanse of sand dunes, majestic swathes of *Cortaderia splendens* on the high and mobile dunes, with large expanses of spinifex (*Spinifex sericeus*) cloaking the front face of the fore dune. At the Whakaki Lagoon, on the eastern side of the island, all three *Bolboschoenus* species occur in close proximity; there are also extensive diverse coastal turfs, with species such as *Limosella lineata*, *Lilaeopsis novae-zelandiae* and *Centipeda cunninghamii*. In a wetland on the margins of Lake Rotoiti, whilst establishing monitoring plots, we encountered a small population of karetu or holy grass (*Hierochloa redolens*), and also oioi (*Apodasmia similis*), a species that has not been recorded in the Lake Rotorua Ecological District since 1873, when Kirk observed it.

It seems that there are always interesting plants to see in every corner I get to visit, whether it is at 'work' or following recreational pursuits. Beneath manuka forest behind the Aotea Heads dunes, our native mint, *Mentha cunninghamii*, provided a very delicate scent as we 'trampled' it whilst traversing the area. In late March, I saw *Myriophyllum votschii* in the turf zone on the shores of Lake Taupo while out for a walk through the township. However, some of the more stand-out plant memories this summer are of adventive species, particularly *Carex*, *Juncus* and grasses.

Large swards of *Glyceria striata*, a species not previously known from the Region, were found in a coastal wetland in the Bay of Plenty. An exotic sedge, *Carex otrubae*, was locally prominent around the margins of Whakaki Lagoon when we visited in November, and was equally common when I returned in February, but not easily identifiable or visible due to seed heads being mainly dead and gone. This has heightened my awareness that newly established exotic species, particularly grasses and sedges, can easily be overlooked when seed heads are not prominent. Over the summer, during this work, as always, the NZPCN website has been invaluable for the photographs provided to assist with identification, and, more recently, the new sections on species distributions. The on-going and increasing usefulness of these facilities rely on all of us submitting our information, including distribution and phenology records.

At our recent Council meeting many innovative ideas were promoted, to ensure that the Network and website continue to grow and evolve, and I am confident that this will be the case. Watch this space, I wish you all the best for future fruitful and enjoyable botanical explorations and conservation initiatives, in the field and online, and we would love to hear about these explorations, for example, see Matt Ward's interesting article on *Spiranthes* below.

Sarah Beadel

Wildland Consultants Ltd

## PLANT OF THE MONTH – *CELMISIA MORGANII*



*Celmisia morganii* in cultivation.  
Photo: Jeremy Rolfe.

Plant of the month for April is *Celmisia morganii*, the Ngakawau Gorge daisy. This charming endemic daisy is found only in the South Island in the vicinity of Ngakawau on the West Coast where it grows in damp seepages and wet spots in rock talus above waterways, and on shaded, wet cliff faces along river gorges.

The plant forms numerous rosettes of dark green leaves with the lower surfaces densely covered in glistening white tomentum. White flowers appear from spring through to autumn. It is easily grown from fresh seed and would make a spectacular garden plant in the right location. Plant it in a shady site in permanently moist, free-draining soil.

Although naturally uncommon, *C. morganii* is abundant in its natural range. At present the main population is located within a river system under investigation for a hydroelectric dam. The Network factsheet for *Celmisia morganii* can be found at: [www.nzpcn.org.nz/flora\\_details.asp?ID=426](http://www.nzpcn.org.nz/flora_details.asp?ID=426)

### Record your plant observations

You can now record all your observations of native and exotic plants using the Network website. Previously, it was possible to record only phenology observations but now you can record any observation of any plant to add to the flora mapping system that was launched a few weeks ago.

- [Record your observation](#)
- [Site search](#)
- [Species search](#)

First, log in using your username and password (or register as a recorder if you are not already a Network member). Then search for the species using the Network Flora search and click on the “Record observation” link in the Resources box on the right hand side. Then fill in the observation form by choosing a site name, selecting the location using the map and recording an approximate abundance.

Of most interest are records of threatened plant populations, species that appear to be outside of their natural range and exotic plant populations that occur in, or near, nature reserves, scenic reserves or parks. If you are in any doubt about the identity of a species you want to record, please check with another Network member or botanist or post a photo of the plant to the Network forum.

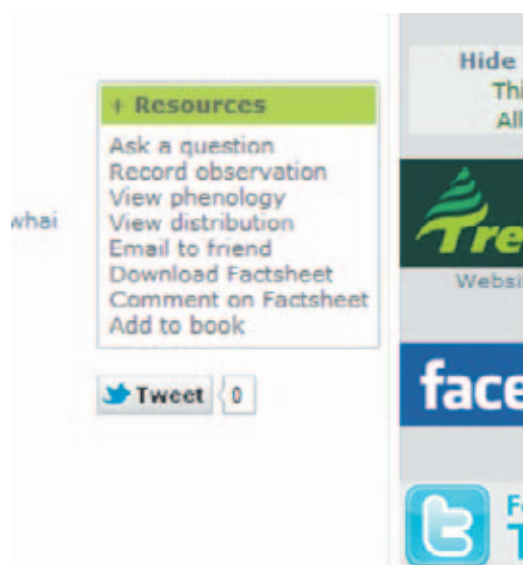
This information will increase understanding of plant distribution and abundance in New Zealand and will form the basis of future plant conservation strategies. It will also help those involved in [ecological restoration](#) work by providing information about potential seed sources. Please ask if you have any queries about the flora mapping system or recording your observations (email: [info@nzpcn.org.nz](mailto:info@nzpcn.org.nz)).



## Make the most of the website resources

The resources available to Network website users continue to grow. On the right hand side of a species details page you will see a resource box with many links. Click on these to:

- Post a **question** to the Forum
- Record your **discoveries** of a plant or your observations of the flowering or fruiting of a plant
- View the **phenology** observations; OR
- View the national **distribution** of a species
- **Email** the page to a friend
- Download the species page as a **PDF document**
- Send us **feedback** about the factsheet
- Add the species to your own personalised **book**
- Or send the page in a **Tweet**



## What are New Zealand's most common vascular plant species?

The new national flora mapping system, recently launched on the Network website, has close to 1 million records of native and exotic plants. A quick search of the database has revealed the vascular plants that have been recorded at the most number of sites (see Tables 1 and 2). Although the number

of site records is a crude way of assessing commonness, are the plants in Table 1 New Zealand's most common native vascular plant species? Is it any surprise that ferns dominate the top three? Likewise, are the exotic vascular plants listed in Table 2 New Zealand's most common adventive species? If you visit a site, are these the exotic plants you are most likely to see?

Should these "common" species, cosmopolitan in their New Zealand distribution, be the focus of greater study or be the subject of long-term monitoring programmes to detect changes in the state of our terrestrial environment?

We encourage you to start using the Network's online flora database to learn more about species' distributions and to add your own observations and to help us correct errors in the data.

## CURRENT FORUM THREADS

- Can anyone shed light on the current taxonomic status of *Anisotome patula*?
- What is the correct name of the entity being sold by some nurseries as *Isotoma fluviatilis*?
- Does *Melicytus* aff. *alipnus* "Blondin" typically have orange stems?

Table 1: Ten native vascular plants with the most records on the Network distribution database

| Number of records | Plant name   | Common name                             |
|-------------------|--|---|
| 3842              | <i>Microsorium pustulatum</i> subsp. <i>pustulatum</i> | Hounds tongue, kowaowao, paraharaha     |
| 3812              | <i>Pteridium esculentum</i>                            | Bracken, rarauhe, bracken fern          |
| 3728              | <i>Asplenium flaccidum</i>                             | Drooping spleenwort, hanging spleenwort |
| 3457              | <i>Leptospermum scoparium</i> var. <i>scoparium</i>    | Manuka, tea tree, kahikatoa             |
| 3248              | <i>Blechnum novae-zelandiae</i>                        | Kiokio, horokio, palm leaf fern         |
| 3219              | <i>Melicytus ramiflorus</i>                            | Mahoe, whitey wood                      |
| 3204              | <i>Myrsine australis</i>                               | Red mapou, red matipo, mapau, red maple |
| 3203              | <i>Pseudopanax crassifolius</i>                        | Horoekea, lancewood                     |
| 3093              | <i>Muehlenbeckia australis</i>                         | Pohuehue, large-leaved muehlenbeckia    |
| 3082              | <i>Pyrrosia eleagnifolia</i>                           | Leather-leaf fern, pyrrosia             |

Table 2: Ten exotic vascular plants with the most records on the Network distribution database

| Number of records | Plant name                   | Common name     |
|-------------------|------------------------------|-----------------|
| 14200             | <i>Clematis vitalba</i>      | Old man's beard |
| 6106              | <i>Ulex europaeus</i>        | Gorse           |
| 4017              | <i>Rubus fruticosus</i> agg. | Blackberry      |
| 3155              | <i>Cytisus scoparius</i>     | Broom           |
| 2940              | <i>Holcus lanatus</i>        | Yorkshire fog   |
| 2808              | <i>Cirsium vulgare</i>       | Scotch thistle  |
| 2497              | <i>Hypochaeris radicata</i>  | Catsear         |
| 2486              | <i>Lotus pedunculatus</i>    | Lotus           |
| 2424              | <i>Anthoxanthum odoratum</i> | Sweet vernal    |
| 2421              | <i>Dactylis glomerata</i>    | Cocksfoot       |

## Help us plug the final image gaps

Can you help us plug the last gaps in our native vascular flora image library? Although we have illustrated 92% of New Zealand's native vascular plant species we are still seeking images for 187 plant taxa—see table below. If you can help us, please send named images to the Network at [info@nzpcn.org.nz](mailto:info@nzpcn.org.nz), with the name of the photographer and details of where the image was taken. If you have multiple images, please post them on a CD (NZPCN, PO Box 16-102, Wellington). Otherwise, here is a perfect photographers' hit list for your spring field trips.

| Species  | Common Name                                      |
|--|--|
| <i>Abrotanella filiformis</i>                          | None known                                       |
| <i>Abrotanella rosulata</i>                            | None known                                       |
| <i>Abrotanella spathulata</i>                          |  |
| <i>Acaena dumicola</i>                                 | Bidibid, piripiri                                |
| <i>Acaena emittens</i>                                 | Bidibid, piripiri                                |
| <i>Aciphylla indurata</i>                              | Taramea  |
| <i>Aciphylla leighii</i>                               | None known                                       |
| <i>Aciphylla stannensis</i>                            | Tin Range speargrass                             |
| <i>Aciphylla takahea</i>                               | None known                                       |
| <i>Aciphylla traillii</i>                              | Stewart Island speargrass                        |
| <i>Aciphylla trifoliolata</i>                          | None known                                       |
| <i>Agrostis imbecilla</i>                              | Feeble bent                                      |
| <i>Agrostis magellanica</i>                            | None known                                       |
| <i>Agrostis pallescens</i>                             | Swamp bent                                       |
| <i>Agrostis subulata</i>                               | None known                                       |
| <i>Anthosachne multiflora</i> subsp. <i>multiflora</i> | Blue grass, blue wheat grass                     |
| <i>Astelia nivicola</i> var. <i>moriceae</i>           | Isobel's lily, Morice's Astelia, Morice's kakaha |
| <i>Azorella macquariensis</i>                          | None known                                       |
| <i>Callitriche aucklandica</i>                         | None known                                       |
| <i>Cardamine corymbosa</i>                             |  |
| <i>Cardamine depressa</i> var. <i>depressa</i>         | Bitter cress                                     |
| <i>Cardamine depressa</i> var. <i>stellata</i>         | Bitter cress                                     |
| <i>Cardamine latior</i>                                | Auckland Islands bitter cress                    |
| <i>Cardamine subcarnosa</i>                            | Campbell Island bitter cress                     |
| <i>Carex cremnicola</i>                                | Sedge  |
| <i>Celmisia cordatifolia</i> var. <i>brockettii</i>    | Mountain daisy                                   |

|  |                              |
|--|------------------------------|
| <i>Celmisia gibbsii</i>  | Gibbs mountain daisy         |
| <i>Celmisia glandulosa</i> var. <i>longiscapa</i>                        | Bog mountain daisy           |
| <i>Celmisia hieraciifolia</i> var. <i>gracilis</i>                       | Mountain daisy               |
| <i>Celmisia parva</i>  | Mountain daisy               |
| <i>Celmisia rigida</i>   |                              |
| <i>Celmisia rupestris</i>  | Mountain daisy               |
| <i>Celmisia similis</i>  |                              |
| <i>Celmisia verbascifolia</i> subsp. <i>membranacea</i>                  |                              |
| <i>Chionochloa flavescens</i> subsp. <i>lupeola</i>                      |                              |
| <i>Chionochloa flavescens</i> subsp. <i>hirta</i>                        | Broad-leaved snow tussock    |
| <i>Chionochloa pallens</i> subsp. <i>pilosa</i>                          | Mid-ribbed snow tussock      |
| <i>Chionochloa rigida</i> subsp. <i>amara</i>                            | Narrow-leaved snow tussock   |
| <i>Chionochloa vireta</i>  | Snow tussock                 |
| <i>Clematis petriei</i>  |                              |
| <i>Colobanthus hookeri</i>   | Hookers Colobanthus          |
| <i>Colobanthus squarrosus</i> subsp. <i>drucei</i>                       | Colobanthus                  |
| <i>Colobanthus squarrosus</i> subsp. <i>squarrosus</i>                   | Colobanthus                  |
| <i>Craspedia robusta</i>   | Woollyhead                   |
| <i>Craspedia uniflora</i> var. <i>grandis</i>                            | Woollyhead                   |
| <i>Craspedia uniflora</i> var. <i>subhispidata</i>                       | Woollyhead                   |
| <i>Craspedia viscosa</i>   | Woollyhead                   |
| <i>Deschampsia gracillima</i>  |                              |
| <i>Dracophyllum longifolium</i> var. <i>cockayneanum</i>                 | None known                   |
| <i>Dracophyllum palustre</i>   | Swamp neinei                 |
| <i>Dracophyllum pearsonii</i>  |                              |
| <i>Dracophyllum politum</i>  |                              |
| <i>Epilobium alsinoides</i>  | Willowherb                   |
| <i>Epilobium brunnescens</i> subsp. <i>minutifolium</i>                  | Creeping willowherb          |
| <i>Epilobium cockayneanum</i>  | Willowherb                   |
| <i>Epilobium elegans</i>   | Willowherb                   |
| <i>Epilobium krulleanum</i>  | Willowherb                   |
| <i>Epilobium matthewsii</i>  | Fiordland willowherb         |
| <i>Epilobium rubromarginatum</i>   | Willowherb                   |
| <i>Euchiton ruahinicus</i>   |                              |
| <i>Euphrasia wettsteiniana</i>   | Eyebright                    |
| <i>Festuca contracta</i>   | Subantarctic fescue          |
| <i>Festuca deflexa</i>   |                              |
| <i>Festuca matthewsii</i> subsp. <i>matthewsii</i>                       | Matthews fescue, blue fescue |
| <i>Festuca ultramafica</i>   | Serpentinite fescue          |
| <i>Forstera sedifolia</i> var. <i>oculata</i>                            |                              |
| <i>Galium antarcticum</i>  | Antarctic bedstraw           |
| <i>Gentianella antipoda</i>  | Antipodes Islands gentian    |
| <i>Gentianella lineata</i>   | None known                   |
| <i>Gentianella montana</i> subsp. <i>montana</i> var. <i>stolonifera</i> |                              |
| <i>Gentianella serotina</i>  | Gentian                      |
| <i>Geranium microphyllum</i>   | None known                   |
| <i>Geum albiflorum</i>   | Auckland Island Geum/Avens   |
| <i>Gingidia enysii</i> var. <i>peninsulare</i>                           | Banks Peninsula aniseed      |

|  |                                |
|--|--------------------------------|
| <i>Gingidia flabellata</i>                               | Stewart Island aniseed         |
| <i>Gingidia trifoliolata</i>                             | None known                     |
| <i>Glossostigma cleistanthum</i>                         |                                |
| <i>Glossostigma diandrum</i>                             |                                |
| <i>Grammitis gunnii</i>                                  | None known                     |
| <i>Grammitis magellanica</i> subsp. <i>magellanica</i>   |                                |
| <i>Haastia recurva</i> var. <i>wallii</i>                | Haastia                        |
| <i>Hebe angustissima</i>                                 | Hebe                           |
| <i>Hebe cockayneana</i>                                  | Hebe                           |
| <i>Hebe crenulata</i>                                    | Hebe                           |
| <i>Hebe divaricata</i>                                   | Hebe                           |
| <i>Hebe flavida</i>                                      |                                |
| <i>Hebe haastii</i>                                      | Hebe                           |
| <i>Hebe leiophylla</i>                                   |                                |
| <i>Hebe macrantha</i> var. <i>brachyphylla</i>           | Hebe                           |
| <i>Hebe matthewsii</i>                                   | Hebe                           |
| <i>Hebe murrellii</i>                                    | Murrell's Hebe                 |
| <i>Hebe rupicola</i>                                     | Hebe                           |
| <i>Hebe stricta</i> var. <i>lata</i>                     | Koromiko                       |
| <i>Hebe truncatula</i>                                   | Hebe                           |
| <i>Helichrysum selago</i> var. <i>acutum</i>             |                                |
| <i>Hierochloe brunonis</i>                               | Southern holy grass            |
| <i>Hierochloe cuprea</i>                                 |                                |
| <i>Hierochloe recurvata</i>                              | Holy grass                     |
| <i>Hydrocotyle robusta</i>                               |                                |
| <i>Hymenophyllum falklandicum</i>                        | None known                     |
| <i>Kelleria lyallii</i>                                  |                                |
| <i>Kelleria villosa</i> var. <i>villosa</i>              |                                |
| <i>Koeleria riguorum</i>                                 | None known                     |
| <i>Lachnagrostis glabra</i>                              | Saltmarsh wind grass           |
| <i>Lachnagrostis leptostachys</i>                        | Wind grass                     |
| <i>Lachnagrostis littoralis</i> subsp. <i>littoralis</i> | Coastal wind grass             |
| <i>Lachnagrostis pilosa</i> subsp. <i>nubifera</i>       | Wind grass                     |
| <i>Lachnagrostis striata</i>                             | Purple wind grass              |
| <i>Lepilaena bilocularis</i>                             | None known                     |
| <i>Leptinella atrata</i> subsp. <i>luteola</i>           | Yellow scree button daisy      |
| <i>Leptinella traillii</i> subsp. <i>pulchella</i>       | None known                     |
| <i>Libertia mooreae</i>                                  | Moore's iris, Moore's mikoikoi |
| <i>Luzula banksiana</i> var. <i>orina</i>                | Coastal woodrush               |
| <i>Luzula crenulata</i>                                  |                                |
| <i>Luzula decipiens</i>                                  |                                |
| <i>Luzula traversii</i> var. <i>tenuis</i>               |                                |
| <i>Mitrasacme novae-zelandiae</i>                        |                                |
| <i>Myosotis antarctica</i>                               |                                |
| <i>Myosotis venosa</i>                                   | Forget-me-not                  |
| <i>Myrmecchila formicifera</i>                           | Ant orchid                     |
| <i>Olearia colensoi</i> var. <i>argentea</i>             | Tupare, leatherwood            |
| <i>Pachycladon crenatus</i>                              |                                |

|  |                              |
|--|------------------------------|
| <i>Parahebe brevistylis</i>                        | None known                   |
| <i>Parahebe catarractae</i>                        | Fiordland Parahebe           |
| <i>Parahebe spectabilis</i>                        | Takitimu Parahebe            |
| <i>Parsonsia capsularis</i> var. <i>ochracea</i>   |                              |
| <i>Parsonsia capsularis</i> var. <i>tenuis</i>     |                              |
| <i>Petalochilus minor</i>                          | Caladenia                    |
| <i>Pimelea aridula</i> subsp. <i>olga</i>          | Pimelea                      |
| <i>Pimelea concinna</i>                            | Pimelea                      |
| <i>Pimelea hirta</i>                               | Pimelea                      |
| <i>Pimelea mesoa</i> subsp. <i>mesoa</i>           | Pimelea                      |
| <i>Pimelea nitens</i> subsp. <i>aspera</i>         | Pimelea                      |
| <i>Pimelea nitens</i> subsp. <i>nitens</i>         | Pimelea                      |
| <i>Pimelea oreophila</i> subsp. <i>ephaistica</i>  | Pimelea                      |
| <i>Pimelea oreophila</i> subsp. <i>hetera</i>      | Pimelea                      |
| <i>Pimelea oreophila</i> subsp. <i>lepta</i>       | Pimelea                      |
| <i>Pimelea sericeovillosa</i> subsp. <i>alta</i>   | Pimelea                      |
| <i>Pimelea suteri</i>                              |                              |
| <i>Pimelea traversii</i> subsp. <i>borea</i>       | None known                   |
| <i>Pimelea traversii</i> subsp. <i>exedra</i>      | None known                   |
| <i>Pimelea urvilleana</i> subsp. <i>nesica</i>     | Pinatoro                     |
| <i>Poa acicularifolia</i> subsp. <i>ophitalis</i>  | Ultramafic cushion poa       |
| <i>Poa antipoda</i>                                | None known                   |
| <i>Poa aucklandica</i> subsp. <i>aucklandica</i>   | Auckland Island poa          |
| <i>Poa aucklandica</i> subsp. <i>campbellensis</i> | Campbell Island poa          |
| <i>Poa breviglumis</i>                             |                              |
| <i>Poa celsa</i>                                   | None known                   |
| <i>Poa cockayneana</i>                             | Avalanche grass              |
| <i>Poa dipsacea</i>                                |                              |
| <i>Poa intrusa</i>                                 |                              |
| <i>Poa maia</i>                                    |                              |
| <i>Poa ramosissima</i>                             | None known                   |
| <i>Puccinellia antipoda</i>                        | Antipodes saltgrass          |
| <i>Puccinellia macquariensis</i>                   | Macquarie Island saltgrass   |
| <i>Ranunculus altus</i>                            |                              |
| <i>Ranunculus biternatus</i>                       |                              |
| <i>Ranunculus mirus</i>                            | None known                   |
| <i>Ranunculus simulans</i>                         | None known                   |
| <i>Ranunculus subscaposus</i>                      | None known                   |
| <i>Raoulia hookeri</i> var. <i>laxa</i>            | Scabweed, scabweed mat daisy |
| <i>Rytidosperma biannulare</i>                     | Gumland bristle grass        |
| <i>Rytidosperma exiguum</i>                        | Mountain twitch              |
| <i>Rytidosperma pulchrum</i>                       |                              |
| <i>Rytidosperma viride</i>                         |                              |
| <i>Schizeilema allanii</i>                         | None known                   |
| <i>Schizeilema colensoi</i>                        | None known                   |
| <i>Schizeilema nitens</i>                          | None known                   |
| <i>Schizeilema pallidum</i>                        | None known                   |
| <i>Schizeilema reniforme</i>                       | None known                   |

|  |   |
|--|---|
| <i>Senecio glaucophyllus</i> subsp. <i>toa</i>           |   |
| <i>Senecio radiolatus</i> subsp. <i>antipodus</i>        | Antipodes groundsel                             |
| <i>Stellaria decipiens</i> var. <i>angustata</i>         |   |
| <i>Trisetum youngii</i>                                  |   |
| <i>Uncinia egmontiana</i>                                | Bastard grass, hook hedge                       |
| <i>Uncinia gracilentia</i>                               | Delicate bastard grass, hook sedge              |
| <i>Uncinia scabra</i>                                    | Harsh-leaved bastard grass, hook sedge          |
| <i>Uncinia sinclairii</i>                                | Sinclair's bastard grass, Sinclair's hook sedge |
| <i>Veronica ciliolata</i> subsp. <i>fiordensis</i>       |   |
| <i>Wahlenbergia albomarginata</i> subsp. <i>flexilis</i> | Ward harebell, Marlborough harebell             |
| <i>Wahlenbergia albomarginata</i> subsp. <i>laxa</i>     | New Zealand harebell, harebell                  |
| <i>Wahlenbergia littoricola</i> subsp. <i>vernica</i>    | Coastal harebell, Glossy Harebell               |
| <i>Wahlenbergia pygmaea</i> subsp. <i>drucei</i>         | Mountain harebell, Egmont harebell              |
| <i>Wahlenbergia pygmaea</i> subsp. <i>tararua</i>        | Tararua harebell                                |
| <i>Wahlenbergia ramosa</i>                               | Coastal harebell                                |
| <i>Wahlenbergia rupestris</i>                            | White harebell                                  |
| <i>Zotovia acicularis</i>                                | None known                                      |

---

## New colony of threatened orchid spotted

Matt Ward, Kapiti Coast District Council ([matt.ward@kapiticoast.govt.nz](mailto:matt.ward@kapiticoast.govt.nz))

A new colony of *Spiranthes novae-zelandiae* has been located in the lower North Island. This is significant because the colony represents only the third to be found in the region.

After completing a morning's graft removing lupin with the Waitohu Stream Care Group in Otaki, I decided to head to the hills. My quest was to find some wetland species to harvest some seed to complete a plant species list required for a Paraparaumu Wetland future restoration project. Collection and redistribution of locally native seeds in the Kapiti District is part of my remit as a Kapiti Coast District Council staffer. I had seen a wetland in the Otaki Forks area alongside one of the walking tracks that I felt might have the required *Carex dipsacea* and *Juncus pallidus*.

I had previously visited and explored the area only briefly due to time constraints; this time I had three hours at my disposal. Being someone described by my wife as having 'orchid fever' I stopped briefly en-route to look at (and maybe take yet another photograph of) a small colony of *Corunastylis nuda* I had earlier found to see if they were in flower. Unfortunately, they had finished and were well into their fruiting stage, "next year" I thought to myself. After crossing the mighty Otaki River again, I branched off the main track to begin my search, the *Carex* species was familiar to me and I had a copy of Johnson & Brooke (1989) to be 100% about the *Juncus* species.

Soon after I started into the wetland complex, I noticed a well-made path of flattened grasses that appeared to have been made by wild deer. Following the path, I ventured around the side of a manuka stand and spotted a fruiting *C. nuda* specimen, "Yes, I thought, this is a great habitat for these guys, there may be some more and still in flower". Sure enough, a few steps further revealed the orchid still blooming. "A good day," I said to myself; finding an orchid in flower makes my day any day. The deer tracks were now meandering



*Spiranthes novae-zelandiae* at Otaki Forks.  
Photo: Matt Ward.



into much deeper, water filled areas with the water filtering into my now soggy boots. The sphagnum moss and *Drosera binata* were fascinating me so I stopped to take a picture. As I crouched down beside the trodden grass track I caught a glimpse of vivid pink, “Vivid pink,” I thought, “it couldn’t be!”

Then they all started to appear as an aligned neural pathway; *Spiranthes novae-zelandiae* specimens were right there in front of me.

I had seen this beautiful orchid before at a location in Paraparaumu, the only lower North Island stalwart colony still

surviving until a find in Wainuiomata in 2010 made it two for the region. The more I looked, the more specimens I found. I counted roughly 100 plants after a reasonable search of the area. I noted the orchid in all early phenological stages, budding, flowering and fruiting; no specimens appeared to be dying back. The colony had specimens up to 350 mm high; they have been recorded at up to one metre high. My boots were filled with water many times over during this search but it all seemed worth it.

*Spiranthes novae-zelandiae* is classified as ‘Nationally Vulnerable’ (de Lange et al., 2009); it is an orchid regarded as extremely uncommon. *Spiranthes novae-zelandiae* is found only in wetlands or near water making it extremely vulnerable to habitat modification and, therefore, habitat loss. This orchid is easily overlooked due to its relatively slender flowering spike. The area this orchid was found in was grazed for many years, which makes one ponder a couple of questions: Did this colony subsist during grazing or did it find its way there since grazing stopped? After taking numerous photos, then finding the both the species I originally came to harvest, I collected the required seed and headed back to the office.

Due to the specialness of this find, I immediately called the Department of Conservation with news of my observation. Photos were then sent for verification and, days later, a species sample was collected to make the find official. I hope this is not the last rare plant I am able to find whilst going about my daily work.

## References

- de Lange PJ, Norton DA, Courtney AP, Heenan PB, Barkla JW, Cameron EK, Hitchmough R, Townsend AJ. 2009. Threatened and uncommon plants of New Zealand (2008 revision). *New Zealand Journal of Botany* 47: 61–96.
- Johnson, PN, Brooke, PA. 1989: *Wetland plants in New Zealand*. Wellington, DSIR Publishing. Reissued with amendment 1998, Manaaki Whenua Press, Lincoln 7640.

## Plant conservation up on the roof

Janice Lord, Botany Department, Otago University ([janice.lord@otago.ac.nz](mailto:janice.lord@otago.ac.nz))

For those of us who work in cities, the view from our office windows is likely to be dominated by hard surfaces with a smattering of planted trees. Urban expansion and accompanying human activities has seen the loss of extensive areas of native plant habitat, especially in lowland and coastal regions of New Zealand. While revegetation projects are becoming more common, they are often focused on establishing woody species for bush regeneration or riparian plantings for wetland restoration. The habitat types most often lacking from an urban landscape are low stature grassland/ herbfields such as those found on riverbeds and other shallow or impoverished soils. Where these communities occur naturally, they very often host a distinct assemblage of plants. However, even without the added threat of urbanisation, these communities are threatened nationally by the



*Spiranthes novae-zelandiae* habitat at Otaki Forks.

Photo: Matt Ward.

invasion of shrubs such as lupin and broom and mat plants such as *Hieracium*. The rooftops of our city skylines offer a perfect opportunity to re-introduce this type of community into urban areas and provide refuges for rare species.

In December 2009 a group from the University of Otago's Botany Department, together with staff from Ribbonwood Nursery established a "green roof" on top of the University of Otago's William James Psychology building with the aim of creating a diverse self-sustaining native plant community. Two years on, the William James roof has the feel of a riverbed, with a rich red-gold mosaic of tussocks, low shrubs and mat- plants. The plants grow in a 75/10/15 mixture of pumice, zeolite and organic matter that is c.200 mm deep in the central area and 100 mm deep around the margins. This growing medium is supported by rigid plastic geogrids and underlain by a waterproof membrane and follows the substrate design provided by Robyn Simcock of Landcare Research Ltd. The green roof is a significant feature adding to the building's environmental credentials. The plants and pumice "soil" contribute to lowering heating and cooling costs. The periphery of the roof is edged with a gravel drainage area protected from root infiltration by perforated aluminium sheeting and a woven barrier that filters rainfall before it is used to flush the 5-storey building's toilets. But, from a botanist's point of view, a green roof is an opportunity to create an island of vegetation, to construct a plant community. Unlike many other green roofs, both in New Zealand and overseas, we aimed for diversity from the outset. The set of plant species used by Robyn Simcock on the Waitakere City Council green roof provided a starting point. This list was amended and expanded to include plants that were ideally native to Otago or at least to the South Island and that naturally occurred in open, drought-prone habitats. All are plants of low stature, with the shrubby species generally less than 800 mm high at maturity. In the end, we planted over 2000 plants of a mix of 20 species (see below) at a density of 9 plants /m<sup>2</sup>, in blocks dominated by either insect-pollinated or wind-pollinated species. The idea behind this block design was not only to provide a mosaic of plant heights and textures but also provide varying types of habitat for insects. We have been monitoring invertebrates since the roof was established and diversity has been steadily increasing. Already we are seeing abundant flies and moths on the roof, honey-bees and bumblebees regularly visit and recently at least one grasshopper has been heard chirping vigorously.



The rooftop garden on the William James Psychology building, Otago University. Photo: Janice Lord.

Establishment success of the plants has been outstanding, far better than for other green roofs elsewhere, probably due to lower evapotranspiration in Dunedin's cool moist climate. No supplementary watering has been required beyond the initial few weeks, even though Dunedin experienced its driest December on record last year. The high reflectivity of the substrate also undoubtedly contributes to maintaining lower soil temperatures. Self-introduced weeds have not been a major issue, with *Trifolium* species the main problem invasive. The shallow substrate and low fertility undoubtedly restrict the colonisation success of other non-nitrogen-fixing species. The most dramatic initial increases in planted species have been among the mat plants, with *Selliera radicans* and *Disphyma australe* patches now covering much of the previously bare ground. *Libertia ixioides* has extended its rhizomes up to 30 cm from each initial planting site. Interestingly, its less common congener *L. peregrinans*, has shown little expansion beyond the initial plantings. The environment seems to suit other rare species of open habitats: *Coprosma acerosa* fruited in the first season and now several seedlings have been sighted, as have *Hebe* seedlings.

The plant community on the William James green roof will obviously continue to change and develop over time and will require ongoing management, but the intention is that intervention will remain minimal and mainly involve hand weeding. Given the success we have had with the initial set of species, in the future, we could introduce other rare species of dryland habitats in order to investigate the potential of this type of environment for *ex situ* plant conservation. Obviously, green roofs would only be suitable for maintaining populations of small statured species, but it is these that are often most threatened by disturbance and invasive weeds, so could benefit from the protected environment that a roof offers. Green roofs are currently attracting a lot of public interest, because bringing greenspace into urban environments is seen as a benefit to city dwellers. Less commonly discussed is how rooftop environments can also benefit plant conservation. Given our experience with the William James green roof and work by Landcare Research and others on green roofs further north, it is clear that native plants can thrive in these arid low fertility environments. The rooftops of our cities can provide a protected environment in which to establish *ex-situ* populations of dryland plants at risk in their natural habitats, but it is up to us, the botanists and plant ecologists, to communicate the vision of plants up on the roof being an opportunity for conservation.

**Mat plants:** *Acaena inermis* var. *purpurea*, *Disphyma australe*, *Leptinella squalida*, *Muehlenbeckia axillaris*, *Pratia angulata*, *Selliera radicans*.

**Shrubs and subshrubs:** *Coprosma acerosa*, *Coprosma depressa*, *Corokia cotoneaster*, *Hebe toparia*, *Hebe odora*, *Melicytus alpinus*, *Pimelea prostrata*

**Graminoids and herbs:** *Festuca actae*, *Isolepis nodosa*, *Libertia peregrinans*, *Libertia ixioides*, *Microtis unifolia*, *Poa colensoi*, *Wahlenbergia albomarginata*

### Seeding success in Sussex

Paul Gorman, *The Press* ([paul.gorman@press.co.nz](mailto:paul.gorman@press.co.nz))

First published in *The Press* on Saturday 31 March; reproduced with permission.

New Zealand is about to join the world's biggest co-ordinated effort to save endangered plants. The agreement between New Zealand's Plant Conservation Network and Kew's Millennium Seed Bank (MSB), based near London, will protect plants like the kaka beak and should be signed in Auckland next Wednesday (*Editor's note: 4 April*).



Seed of the Nationally Critical *Hibiscus richardsonii*.  
Photo: Jeremy Rolfe.

The head of the seed bank, Paul Smith, will attend the meeting, as will Plant Conservation Network president Philippa Crisp. The Conservation Department will be there as an observer. Lincoln University and Massey University are also expected to play major roles in the seed-bank project. Network co-founder and secretary, John Sawyer, now the Auckland Council's principal natural heritage adviser, has spearheaded moves to join forces with the MSB.

Nearly 100,000 species of plants around the world are threatened with extinction, mainly as a result of human activities. The programme, at Wakehurst Place, about 50 kilometres south of London, has stored seeds from more than 10 per cent of the world's wild plants and is aiming to secure 25 per cent by 2020.

While New Zealand is poised to become the 55th country to join the MSB partnership to protect and study seeds from threatened plants, Australia has been involved since it was launched in October 2000. Smith said the focus for the seed bank's first decade had been on dryland plants but it was broadening its efforts to include alpine, island and coastal ecosystems.

Sawyer said the agreement was the first step towards a national seed-bank partnership and raising money for seed research. The plan was to keep New Zealand seed in New Zealand rather than send it overseas.

Smith said the MSB had no problem with that. The partnership would provide the support and framework to ensure seeds were kept in the same conditions here as they would be in Britain. Sawyer said there was no legal protection in New Zealand for native plants, unlike wildlife, which was protected under the Wildlife Act. “It is important to act now to halt further declines in our unique flora,” he said. “We have more than 1900 species of vascular plants that are not found anywhere else in the world, and many of these are still in serious decline, with close to 100 on the verge of extinction, such as the kaka beak and the Chatham Island forget-me-not.”

Crisp said it was great that the MSB existed and that “We will have that safety net for our seeds”.

### Seed bank agreement update

The historic signing of the agreement between NZPCN and Kew’s Millennium Seed bank took place on 4 April at Auckland Botanic Gardens. The associated meeting was attended by representatives from Kew Gardens, NZPCN, Department of Conservation (as observers), Landcare Research, Massey University, Margot Forde Germplasm Centre and Botanic Gardens. Paul Smith, from Kew, provided some background to how the Millennium Seed bank operates and confirmed that the Margot Forde Germplasm Centre in Palmerston North could serve as the main repository for New Zealand’s native seeds. Kew requires that seed be stored at two locations and there was agreement that the Botanic Gardens of New Zealand would consider how they could play a role in seed-banking. Expeditions to collect seeds were discussed and Paul Smith indicated that Kew could assist with seed collection training for such expeditions.

### Book review *The Island’s Plants: Ecorestoration of Otamahua/Quail Island, 1997–2010*

by Colin J. Burrows and Hugh D. Wilson.

Sarah Beadel, Wildland Consultants Ltd ([sarah.beadel@wildlands.co.nz](mailto:sarah.beadel@wildlands.co.nz))

When this book was presented at our recent Council meeting, with a request for a reviewer, it sparked a great deal of interest, such is the respect in which the authors are held. I have a particular interest in Quail Island because I spent a lot of my early childhood exploring Banks Peninsula, with many holidays at Diamond Harbour, and being fortunate in having a grandfather whose favourite idea of an outing with any of his many grandchildren was to take them for a walk on the Port Hills. But it was Quail Island that I was always attracted to, probably because it was an island, but also the romanticism of its history, including a period as a leper colony, which made it a favourite place to visit. So it was with great interest that I read the offering from Colin Burrows and Hugh Wilson relating to its restoration.



The physical presentation of the book is excellent. It has a lovely feel to it and is very easy to read and browse, being well sprinkled with drawings, maps, and photographs. The quality of the paper and the rounded corners are also well suited to use “in the field”. It is also a good size to take with you on a trip to the Island, and indeed would answer many or all of the questions that a visitor may have about the restoration activities, and the plants to be seen on a day excursion.

This book contains a wealth of information, including a myriad of details about the plants on the Island, including which species have been planted, in what numbers, and whether they are natural to the Island and/or Banks Peninsula. It also documents the background of the restoration programme

and its current status. The word 'ecore restoration' used throughout is wonderfully evocative and its use is likely to become widespread.

However, for a book entitled "The Island's Plants", it was somewhat disappointing not to see a full list of plant species present on the island provided in this volume, or at least clear identification where a full species list can be found. Rather, readers are directed to "Full species lists for vascular flora of the island are to be found among the references, p. 129". However, there are 39 references listed on pp. 127–128 (rather than p. 129), and it is not clearly identified which one would provide the most up-to-date list of species for the island.

Plant illustrations make up the bulk of the book, p. 16-88, and are of superb quality. Reproduction of the drawings is excellent and, when used in combination with the text on each species, gives a description of where each illustrated species occurs on the Island, which would enable most botanically-minded users to be able to identify what they are looking at. I particularly enjoyed the illustrations of some of the native grasses and sedges, such as plume grass (*Dichelache crinata*) and *Ficinia nodosa*. However, it should be noted that only one-third of the vascular plant species are illustrated. A paginated index or a list of the species illustrated is not provided, but would be very useful.

As with most books, there are a few very minor oversights that do not detract from the overall value of the book. It appears that the title may have evolved during preparation, as the left-hand page header throughout the book is "Ecore restoration of Otamahana/Quail Island", whereas the title of the book is "The Island's Plants". The appendices have, as a right-hand page header, "Background to the Ecore restoration Project", but this also includes the glossary. Some of the printing is not perfect; for example the top of the text labelling Figure 4 has been cut off. The photograph selection and reproduction is of variable quality. The photograph of the harakeke flower head is very good, as are the kowhai, ngaio and mahoe, but several others are not particularly effective in depicting the subject to help identification, such as bracken and akeake.

Overall, this book is a valuable addition to the book shelf of any ecological restoration enthusiast or field botanist and, if you plan to visit the island, it would be invaluable and would considerably enhance that experience. I have no hesitation in recommending it as a particularly useful addition to our botanical literature.

## **Proposed Data Repository: Prehuman Vegetation of New Zealand**

*Jamie Wood & Janet Wilmshurst, Landcare Research, PO Box 40, Lincoln 7640, New Zealand*

Please find below details about our proposal to create a data repository for New Zealand pre-human vegetation data. At this stage we are interested in gaining comments and suggestions from potential users of such a resource, as to what features they would like incorporated (i.e. how might you like to query the data and what functions would assist this), and any additional potential uses you may foresee for such a dataset.

Your comments should be submitted via this [anonymous survey](#) – we would very much appreciate your feedback.

### **Proposal summary**

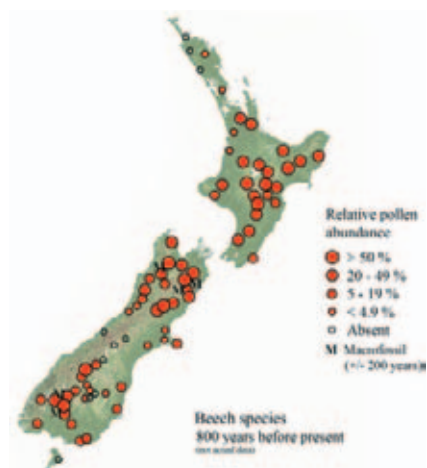
#### ***What has happened to New Zealand's vegetation since humans arrived?***

The settlement of New Zealand by humans approximately 750 years ago was the beginning of a period of rapid and dramatic ecological change. Fires lit by early settlers removed 40–50% of the native forests that dominated the land below treeline. Continued clearances through to the present have resulted in the proliferation of grasslands throughout the country. The numerous faunal extinctions that resulted from habitat loss, human hunting and predation by introduced mammals likely resulted in reduced seed dispersal and pollination, altering vegetation community structure and composition in the remaining forests.

With so much loss and disturbance of New Zealand's native vegetation communities, fossil evidence (such as pollen and seeds) can provide a unique means for determining what our vegetation communities were like before humans arrived (palaeovegetation). Over the past century, a large amount of fossil evidence for New Zealand's palaeovegetation has been collected, but much of this is currently difficult to access: for example many published pollen records only present summary data, and many full datasets reside unpublished in the filing cabinets of researchers, or in ageing computer file types.

### ***What is the proposed repository?***

We propose to provide an online repository for the secure, long-term storage of New Zealand palaeovegetation data. It will provide, for the first time, a place where data from across New Zealand can be collated and easily searched and summarised by interested parties, including the general public.



The back end of the repository will be where researchers can upload their data files via their own personal login, set confidentiality and accessibility settings to each data set, and provide ease of management through having all their data together in one place, or just to provide a backup to their own personal computer files. The front end of the repository will be a public online portal, where anyone can search, sort and summarise accessible data of specific interest to them. Similar sites have been set up for several continents around the world. A good example can be seen at <http://pollen.cerege.fr/fpd-epd/>

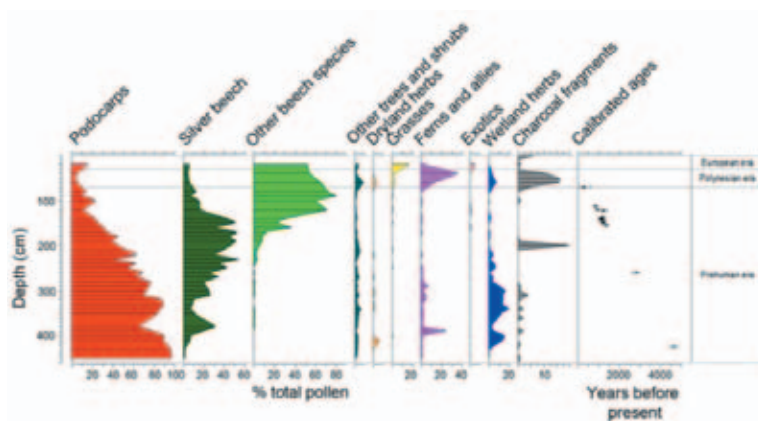
### ***What features could be available on the online interface?***

- Search records based on taxa, time periods, and geographic areas of interest.
- Produce figures showing national distribution of selected plant taxon at desired date (*see sample map*).
- Produce customised pollen diagrams for each pollen core site, by selecting desired site, plant taxa and time range (*sample pollen diagram*).
- Produce animations showing changing distribution of selected plant taxon over a desired time period.

### ***How could I use the data?***

Analysis of changing distributions of selected plant taxa with respect to:

- Anthropogenic, physical, or climatic variables.
- Develop models for interpreting phylogenetic relationships of plant populations.
- Baseline data for estimating post-settlement loss of habitat types.
- Production of local vegetation histories to help guide replanting schemes.
- General interest in local vegetation history.
- [Provide feedback](#)



Feedback from this scoping exercise will assist in the preparation of a funding application to the Terrestrial and Freshwater Biodiversity Information System scheme administered by the New Zealand Department of Conservation which will assist us to set up the online repository.

## UPCOMING EVENTS

If you have important events or news that you would like publicised via this newsletter please email the Network ([events@nzpcn.org.nz](mailto:events@nzpcn.org.nz)):

### 8th Asia Pacific Conference on Algae Biotechnology for the Asia Pacific Society for Applied Phycology

---

**Conference:** Adelaide, Australia, 9 – 12 July ([www.sapmea.asn.au/apcab2012](http://www.sapmea.asn.au/apcab2012)).

**Contact:** Conference Secretariat:  
ph: +61 8 8274 6048;  
fax: +61 8 8274 6000;  
e-mail: [apcab2012@sapmea.asn.au](mailto:apcab2012@sapmea.asn.au)

---

### Auckland Botanical Society

---

**Meeting:** Wednesday 2 May at 7.30 p.m. a talk by Mike Wilcox on the trip to Tasmania followed by Christine Major talking about the camp in Arthur's Pass. **Venue:** Unitec School of Health Sciences, Gate 4, Building 115. Room 2005.

**Contact:** Maureen Young,  
e-mail: [youngmaureen@xtra.co.nz](mailto:youngmaureen@xtra.co.nz)

---

**Field trip:** Saturday 19 May to Dr Adah Platt-Mills Reserve, Maraetai. **Leaders:** John and Anna Rugis.

**Contact:** Mike Wilcox,  
e-mail: [mike.wilcox@xtra.co.nz](mailto:mike.wilcox@xtra.co.nz)

---

### Rotorua Botanical Society

---

**Field trip:** Wednesday 25 April to Pokopoko Scenic Reserve, SH33. **Meet:** the car park, Rotorua, at 8.30 a.m. or at picnic area on east side of SH33 (the only one between Paengaroa and Okere Falls) at 9.00 a.m. **Grade:** medium-hard; help compile the first plant species list for the reserve.

**Leader:** Paul Cashmore,  
ph: 07 348 4421 (hm),  
349 7432 (wk),  
e-mail: [pcashmore@doc.govt.nz](mailto:pcashmore@doc.govt.nz)

---

**Field trip:** Sunday 12 May to Te Tuhi Track, Kaimais (combined with Waikato Botanical Society). **Meet:** the car park, Rotorua, 8.00 a.m. or end of Te Tuhi Road off Old Te Aroha Rd at 9.00 a.m. **Grade:** medium-hard.

**Leader:** Leader Kerry Jones,  
e-mail: [km8j1s@gmail.com](mailto:km8j1s@gmail.com),  
ph: 07 855 9700 (home),  
mobile: 027 747 0733.

---

**Meeting:** mid May, the Rotorua Botanical Society Lecture by Chris Bycroft titled 'Photographs and ecology of geothermal sites in the Taupo Volcanic Zone. **Venue and time:** to be announced.

**Contact:** secretary Sarah Crump  
([scrump@doc.govt.nz](mailto:scrump@doc.govt.nz)).

---

### Wanganui Museum Botanical Group

---

**Field trip:** Saturday 28 April to Ian Moore's property Longacre Road. **Meet:** outside Girls' College, Jones St at 9.45 a.m.

**Transport coordinator:**  
Clare Ridler, ph: 06 342 7788 (hm),  
0508 800800 (wk)

---

**Meeting:** Tuesday 1 May at 7.30 p.m. a talk by Cindy Skema, Massey University, titled 'Madagascar – its plants, and something of its people and animals'. **Venue:** Museum's Davis lecture theatre.

**Contacts:** Robyn and Colin Ogle,  
ph: 06 347 8547,  
e-mail: [robcol.ogle@xtra.co.nz](mailto:robcol.ogle@xtra.co.nz)

---

**Field trip:** Tuesday 22 May to Kumete Stream, Westmere (**note:** this is a WEEKDAY trip). See: [www.kumeteforest.org.nz](http://www.kumeteforest.org.nz) for more information. **Meet:** Police Station at 9.00 a.m. Bring spades to help with planting.

**Leader:** Clare Ridler,  
ph: 06 342 7788 (hm),  
0508 800800 (wk).

---

## Wellington Botanical Society

---

**Field trip:** Saturday 5 May to Seton Nossiter Park, easy walking.  
**Meet:** 9.15 a.m. at bus stop on Kentwood Drive near Peppertree Lane, Woodridge.

**Leader:** Frances Forsyth,  
ph: 04 384 8891, mobile:  
021 072 5210, **deputy-leader:**  
Peter Gilberd, ph: 027 614 1416.

---

**Meeting:** Monday 21 May at 7.30 p.m. a Members' evening with auction. Share your botanical slides and photographs taken on BotSoc trips, your paintings, drawings and your favourite botanical readings. Auction: bring your spare botanical or other natural history books to auction.

**Venue:** lecture theatre MYLT101, ground floor Murphy Building, west side of Kelburn Parade. Enter building off Kelburn Parade about 20 m below pedestrian overbridge.

---

## Nelson Botanical Society

---

**Field trip:** Sunday May 20 a Fungal Foray at Pelorus Scenic Reserve.

**Leader:** Rebecca Bowater,  
ph: 03 545 1260.

---

**Meeting:** Monday May 21 at 7.30 p.m. a talk by Helen Lindsay titled 'Restoration planting and weed control on Motuora Island.'

**Venue:** Jaycees Room in Founders Park, Nelson.

---

## Canterbury Botanical Society

---

**Meeting:** Friday 4 May at 8.30 p.m. a talk by Melissa Huchison titled 'Hawaiian flora'. **Venue:** Room A5, University of Canterbury.

**Contact:** Gillian Giller,  
ph: 03 313 5315,  
e-mail: [ggillerma1@actrix.gen.nz](mailto:ggillerma1@actrix.gen.nz).

---

**Field trip:** Saturday 12 May to Judy Bugo's native plant area, Banks Peninsula.

**Contact:** Gillian Giller,  
ph: 03 313 5315,  
e-mail: [ggillerma1@actrix.gen.nz](mailto:ggillerma1@actrix.gen.nz).

---

## Yellow-eyed Penguin Trust

---

**Planting day:** Sunday 27 May at Tavora Reserve, East Otago. Meet: at the Tavora car park at 10.00 a.m.

**Information:** Yellow-eyed Penguin Trust ph: 03 479 0011, email: [yeprtrust@gmail.com](mailto:yeprtrust@gmail.com).

---